

**U.S. Pat. Appl. Ser. No. 10/576,683
Attorney Docket No. 10191/4296
Reply to Office Action of September 23, 2008**

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-12. (Canceled).

13. (Currently Amended) A sensor for detecting particles in a gas stream, comprising:
a first electrode device;
a second electrode device situated at a specified vertical distance from the first electrode device, wherein at least portions of the first and second electrode devices are configured to be exposed to the gas stream; and
an intermediate layer separating the first and second electrode devices; [[,]]
wherein:
the specified distance between the first and second electrode devices corresponds to the thickness of the intermediate layer; ~~, and wherein~~
the intermediate layer includes an electrically insulating material; [[,]] and
~~wherein~~
portions of edges of the first and second electrode devices are configured to be exposed to the gas stream.

14. (Previously Presented) The sensor as recited in Claim 13, wherein the intermediate layer includes one of a foil and a thick film.

15. (Previously Presented) The sensor as recited in Claim 14, wherein at least one of the first and second electrode devices includes a plurality of individual electrodes.

16. (Previously Presented) The sensor as recited in Claim 14, wherein the portions of the edges of the first and second electrode devices configured to be exposed to the gas stream are situated at least one of: a) at a free outer edge of the sensor; b) at a through-hole in the sensor; and c) at a blind-hole-type opening in the sensor.

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17. (Previously Presented) The sensor as recited in Claim 15, wherein the portions of the edges of the first and second electrode devices configured to be exposed to the gas stream are situated at least one of: a) at a free outer edge of the sensor; b) at a through-hole in the sensor; and c) at a blind-hole-type opening in the sensor.

18. (Previously Presented) The sensor as recited in Claim 16, wherein each of the first and second electrode devices is imprinted onto a foil.

19. (Previously Presented) The sensor as recited in Claim 18, further comprising:
a heating device.

20. (Previously Presented) The sensor as recited in Claim 19, further comprising:
a temperature-sensing device.

21. (Previously Presented) The sensor as recited in Claim 20, wherein at least one of the heating device and the temperature-sensing device is imprinted onto a foil.

22. (Previously Presented) A method for manufacturing a sensor for detecting particles in a gas stream, comprising:

- a) applying a first electrode device on a first carrier;
- b) applying a second electrode device on a second carrier;
- c) applying an intermediate layer including an electrically insulating material on the side of the first carrier on which the first electrode device is applied;
- d) arranging the second carrier having the second electrode device on the intermediate layer in such a way that the side of the second carrier on which the second electrode device is applied faces the intermediate layer;
- e) laminating the first electrode device having the first carrier, the second electrode device having the second carrier, and the intermediate layer to each other to create a laminate product; and
- f) processing the laminate product in such a way that adjacent edges of the first and second electrode devices are exposed and set apart from each other only by the thickness of the intermediate layer.

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23. (Previously Presented) A method for manufacturing a sensor for detecting particles in a gas stream, comprising:

- a) applying a first electrode device on a first carrier;
- b) applying at least one insulating intermediate layer on the first electrode device;
- c) applying a second electrode device on the insulating intermediate layer;
- d) applying a protective layer on the second electrode device;
- e) laminating the first electrode device having the first carrier, the second electrode device, the insulating intermediate layer, and the protective layer to each other to create a laminate product; and
- f) processing the laminate product in such a way that adjacent edges of the first and second electrode devices are exposed and set apart from each other only by the thickness of the insulating intermediate layer.

24. (Previously Presented): The method as recited in Claim 22, wherein in step f), the laminate product is one of cut, punched and bored.

[[24]] 25. (Currently Amended) The method as recited in Claim 23, wherein in step f), the laminate product is one of cut, punched and bored.

[[25]] 26. (Currently Amended) The method as recited in Claim 22, further comprising:

prior to step d), applying a combustible material at least on the first carrier and on the intermediate layer at each location at which the first and second electrode devices are intended to have exposed edges; and

heating the laminate product such that burning of the combustible material and corresponding location of the first carrier and the intermediate layer on which the combustible material was applied occurs.

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[[26]] 27. (Currently Amended) The method as recited in Claim 23, further comprising:

prior to step d), applying a combustible material at least on the first carrier and on the insulating intermediate layer at each location at which the first and second electrode devices are intended to have exposed edges; and

heating the laminate product such that burning of the combustible material and corresponding location of the first carrier and the insulating intermediate layer on which the combustible material was applied occurs.

28. (New) A sensor for detecting particles in a gas stream, comprising:

a first electrode device applied on a side of a first carrier;

a second electrode device applied on a side of a second carrier;

an intermediate layer applied on the side of the first carrier on which the first electrode device is applied;

wherein:

the intermediate layer includes an electrically insulating material;

the second carrier is arranged on the intermediate layer in such a way that the side of the second carrier on which the second electrode device is applied faces the intermediate layer;

the first electrode device having the first carrier, the second electrode device having the second carrier, and the intermediate layer are laminated to each other forming a laminate product; and

the laminate product is processed such that adjacent edges of the first and second electrode devices are exposed and set apart from each other only by the thickness of the intermediate layer.

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29. (New) A sensor for detecting particles in a gas stream, comprising:
- a first electrode device applied on a side of a first carrier, and wherein at least one insulating intermediate layer is applied on the first electrode device;
 - a second electrode device applied on a side of the insulating intermediate layer;
 - a protective layer is applied on the second electrode;
 - the insulating intermediate layer separating the first and second electrode devices; wherein:
 - the insulating intermediate layer includes an electrically insulating material;
 - the first electrode device having the first carrier, the second electrode device having the second carrier, and the intermediate layer are laminated to each other forming a laminate product; and
 - the laminate product is processed such that adjacent edges of the first and second electrode devices are exposed and set apart from each other only by the thickness of the insulating intermediate layer.
30. (New) A sensor for detecting particles in a gas stream, comprising:
- a first electrode device;
 - a second electrode device situated at a specified vertical distance from the first electrode device, wherein at least portions of the first and second electrode devices are configured to be exposed to the gas stream;
 - a detector detecting an impedance between the first and second electrode devices; and
 - an intermediate layer separating the first and second electrode devices; wherein:
 - the specified distance between the first and second electrode devices corresponds to the thickness of the intermediate layer;
 - the intermediate layer includes an electrically insulating material; and
 - portions of edges of the first and second electrode devices are configured to be exposed to the gas stream.